

CLAIMS:

What is claimed is:

1. A method for producing an expanded, farinaceous food product having enhanced flavor characteristics without the use of a drying oven, said method comprising, in combination, the following steps:

(a) plasticizing a farinaceous food mixture into a first extrudate flow containing from about 5 weight percent to about 17 weight percent of at least one plasticizer selected from monosaccharides, polysaccharides, and edible alcohols and having a moisture content from about 9 weight percent to about 17 weight percent in an extruder barrel having a barrel pressure equal to or in excess of the vapor pressure of the water in the mixture;

(b) directing the first extrudate flow from said extruder barrel to a central passageway;

(c) imparting at least one cleft in the first extrudate flow thereby dividing the first extrudate flow into a plurality of adjacent flowing extrudate flows;

(d) injecting a flavored fluid additive into the at least one cleft between the plurality of adjacent flowing extrudate flows;

(i) wherein the injecting step utilizes a co-injection die insert having at least one capillary channel in fluid communication with a peripheral reservoir manifold circumscribing the injection assembly,

(ii) wherein the injection step further utilizes a supply port fluidly connecting the peripheral reservoir manifold to a fluid additive source;

(e) coalescing the plurality of adjacent flowing extrudate flows into a second extrudate flow while generally maintaining the fluid additive's relative position between the plurality of adjacent flowing extrudate flows; and

(f) extruding the second extrudate flow through a nozzle section into a zone of ambient pressure below the vapor pressure of the water in the mixture;

thereby producing a crisp flavored product having a moisture content from about 4 weight percent to about 8 weight percent and a water activity from about 0.30 to about 0.45.

2. The method of Claim 1, wherein the plasticizer is selected from the group consisting of maltodextrin, polydextrose, sucrose, corn syrup solids, and glycerol.

3. The method of Claim 1, wherein the plasticizer is a mixture containing from about 4% to about 6% corn syrup solids, from about 3% to about 6% polydextrose, from about 0.5% to about 2% sucrose, and from about 0.5% to about 2.5% glycerol, based on the total weight of the farinaceous food mixture.

1 4. The method of Claim 1, comprising adding as the plasticizer from about 6 weight
2 percent to about 15 weight percent, based on the total weight of the farinaceous food
3 mixture, one or more of the group consisting of sucrose, maltose, fructose, dextrose,
4 polysaccharides, and edible alcohols.

1 5. The method of Claim 1, wherein the farinaceous food mixture is plasticized by
2 contacting it with co-rotating twin extruder screws in the extruder barrel.

1 6. The method of Claim 1, wherein the farinaceous food mixture contains at least one
2 material selected from the group consisting of meals, flours, and starches derived from
3 corn, wheat, rice, oats, barley, potatoes, rye, tapioca and other cereal crops, legumes, and
4 tubers.

1 7. The method of Claim 1, wherein the farinaceous food mixture contains corn meal.

1 8. The method of Claim 1, wherein said nozzle section reduces the cross sectional area
2 of the second extrudate flow by a factor less than 20:1.

1 9. The method of Claim 8, wherein said nozzle section reduces the cross sectional area
2 of the second extrudate flow by a factor greater than 4:1.

1 10. The method of Claim 1, wherein the fluid additive is colored.

1 11. The method of Claim 10, wherein the fluid additive comprises a first color and the
2 farinaceous food mixture comprises a second color.

1 12. The method of Claim 1, further comprising between steps (e) and (f), the step of
2 mixing said flavored fluid additive and said second extrudate into a more homogeneous
3 mixture with a static mixing mechanism positioned in said passageway.

1 13. A crisp, expanded, farinaceous food product exhibiting enhanced flavor
2 characteristics, and having a moisture content from about 4 weight percent to about 8
3 weight percent and a water activity of from about 0.30 to about 0.45, which is produced
4 by the process of claim 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, or 12.